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EXAMINER	
LAZORCIK, JASON L	
ART UNIT	PAPER NUMBER
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/803,015	KIKUCHI, KIMIHIRO	
	Examiner	Art Unit	
	JASON L. LAZORCIK	1791	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *14 March 2008*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-4,6-9 and 11-22* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-4,6-9 and 11-22* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claim 20 and 22 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Applicants newly presented claim 20 requires in part that "...in the absence of such extra amount, substantially no optical-element material flows into the void part of the cylindrical holder". After careful review of Applicants specification as originally filed, it is the Examiners position that the specification does not explicitly disclose the instant limitation and that the disclosure does not reasonably convey said limitation to one of ordinary skill.

.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-4, 6-9, 11-22 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1 recites the limitation "the volume required for forming the optical element" in line 19. There is insufficient antecedent basis for this limitation in the claim.

Claim 1 recites the limitation "the spatial volume of the void part" and "the volume of the extra amount of the optical element material" in lines 20 and 21, respectively. There is insufficient antecedent basis for this limitation in the claim.

Claim 1 is rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential elements, such omission amounting to a gap between the elements. See MPEP § 2172.01. Specifically, Applicants amended claim 1 notes that an extra amount of optical element material is added to the volume required to form the optical element "in advance", but fails to note precisely what this "adding step" is carried out in advance of (e.g. in advance of the press molding operation).

Claim 20 is rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential elements, such omission amounting to a gap between the elements. See MPEP § 2172.01. Similar to the comments on claim 1 above, the instant claim requires that an extra amount of optical element material is added to the volume required to form the optical element "in advance", but fails to note precisely what this "adding step" is carried out in advance of (e.g. in advance of the press molding operation).

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

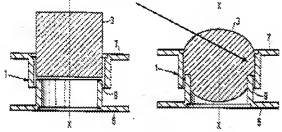
Claims 1-2, 4, 8, 12-16, and 18-20 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Bartman (US 4,891,053).

Bartman teaches a press molding operation wherein a glass optical element material and a cylindrical holder body are united into an integral form. The Bartman disclosed process comprises positioning a lens blank into a holder consisting of two cylindrical rings which define an annular or "concentric" void/"cavity" in an inner circumferential surface. With reference to the annotated Figures 1, 2, 5, and 6 excerpts below, the cylindrical holder is understood to comprise an annular gap (9) or cavity in the inner surface (See notation in magnified view of figure 2 below right). It will appear evident in the magnified view of figure 2 below that this void part (9) presents a thickness extending in a radial direction from an inner circumferential surface of the holder material. The void part is therefore construed to "extend out in a radial direction of the cylindrical holder from the inner circumferential surface of the cylindrical holder" as required in claim 1.

The lens blank and holder are heated to the working temperature of the glass blank or "the softening temperature" at which point they are press molded. It is particularly noted that in the preliminary pressing stage represented by the transition from Figs 1 to 2, the optical blank radially expands into contact with the inner circumferential surface and partially into the cavity (9) to form a "projected portion". The subsequent precision molding operation represented by figures 5 and 6, further extends the projected portion in the radial direction while maintaining at least a portion of the projected portion in a "contained" state between the inner and outer circumferential surfaces.

It follows from the foregoing that during the disclosed press molding, a portion of the optical element is radially extruded into the cavity (9) and is either partially or wholly (e.g. fig 2 vs. fig 6) retained by the void part of the holder. This extruded portion is construed to extend radially outward from an outer edge of the optical element and is further construed as a "hemispherical section of the optical-element material". Further, it is the Examiners position that through at least a portion the pressing operation presented in figs 1, 2, 5, and 6, the spatial volume of the void part (9) is larger than the volume of the extra amount of the optical element material. Restated, there exists a point in the Bartman process wherein the extruded portion of optical element material does not completely fill the spatial volume of the void part (9). As such the prior art process reads upon Applicants claimed process "comprising" a spatial volume larger than the volume of the extra amount of the optical element material.

Fig 1 → Fig 2
Optical material radially expands into contact with inner circumferential surface and is contained by void (9)



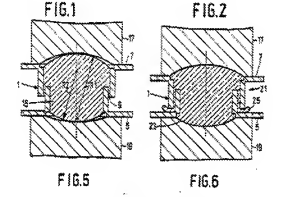
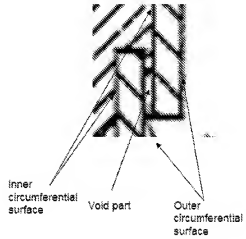


Fig 5 → Fig 6
Upon subsequent pressing, optical material extends further in the radial direction but it is still contained b/w inner and outer circumferential surfaces

Magnified view of Figure 2:
Note Optical Material (3) extends into Void part (9) And is "contained" b/w inner and outer circumferential surfaces



Bartman indicates that an excess of glass material is utilized in order to allow for extrusion during the pressing operation (Column 2, Lines 12-13) and that the annular gap between the rings can be determined so that an effectively high pressure can be realized during the moulding process (Column 1, line 68-Column 2, Line 7). In other words, the "volume of the void" and therefore the flow resistance of the holder material are adjustable in order to realize an adequate pressure during the molding cycle.

With respect to claims 10, 12, and 18, it is understood that a cylindrical holder inherently comprises "an outer portion forming an outer circumferential surface", that the holder material has an inherent resistance to flow, that the glass optical element

material is inherently characterized by "a viscosity", a glass transition temperature and a glass softening temperature. Further in accord with the fundamental laws governing fluid dynamics, "the flow resistance of the holder material" and specifically the resistance to flow experienced by the optical element material in the annular cavity necessarily and inherently varies inversely with the viscosity of the optical element material.

Regarding Claims 16 and 19, Claim 1 recites the limitation that "the materials are heated to their own softening temperature" in line 7-8 of the identified claim. Therefore said optical-element material is inherently heated to "a temperature about 30 degrees lower than the softening temperature of the cylindrical holder material" as set forth in Claim 16 and to "a temperature between the glass transition and the glass softening temperature of the optical element material" as set forth in Claim 19.

In the event that Applicant contests the Examiners position, namely that Bartman teaches at least one configuration in the disclosed process wherein "the spatial volume of the void part is larger than the volume of the extra amount of the optical -element material", then it such a limitation is deemed as an obvious extension over the Bartman Teachings.

Specifically, one of ordinary skill in the art at the time of the invention would reasonably be expected to tailor the volume of starting material and the pressing conditions utilized in the pressing operation. In the instant case, using less optical-element material than necessary to completely fill the void volume would provide distinct

and predictable benefits, namely reduced glass waste and the avoidance of trimming excess material extruded through the void (9). It follows that one of ordinary skill in the art would reasonably be expected to arrive at applicants claimed invention through no more than routine experimentation and optimization of the prior art disclosed process.

Similarly, should Applicant contest the particular operating temperatures (see claims 18, 19), it is the Examiners position that one of ordinary skill would reasonably be expected to optimize the particular temperatures as a matter of routine quality control and process optimization. It follows, absent any compelling evidence to the contrary, that Applicants claimed operating temperatures are either implicitly disclosed in the prior art or alternately that said temperatures would reasonably have been derived by one of ordinary skill in the art by no more than routine experimentation and optimization of the prior art disclosed process.

Claims 1-4, 11-12, 14-15, 18-22 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Demerritt (US 5,274,502).

Demerritt teaches formation of a holder/optical-element assembly. As depicted in Figure 1, a blank (20) of optical material is positioned within a cylindrical holder material (22) having an outer and inner circumferential surfaces. The blank and holder materials are loaded into a precision press mold, heated to a softened state, and

pressed to thereby fix the optical element to the inner circumferential surface of the holder.

In one preferred embodiment (see Figure 4 excerpt below), Demerritt teaches that the holder material may be provided with a void part located on the inner circumferential surface. It is the Examiners position that performing the disclosed press molding operation with the depicted holder would inherently result in the radial expansion of excess optical material into the void part.

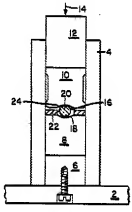
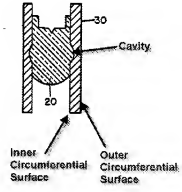


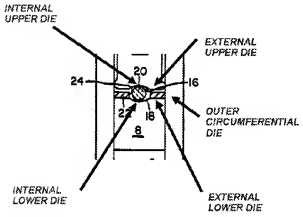
Fig. 1



In similar spirit to the rejection of claims under Bartman above, there exists a point in the Demerritt process wherein the extruded portion of optical element material does not completely fill the spatial volume of the void part or cavity. As such the prior art process reads upon Applicants claimed process "comprising" a spatial volume larger than the volume of the extra amount of the optical element material.

With respect to Applicants newly presented claims 21 and 22, it is evident from the following annotated excerpt figure 1 that the Demerritt process utilizes the clamed

internal and external dies for forming the surfaces of the optical element and the circumferential surfaces of the cylindrical holder, respectively. Further, Demerritt teaches the use of an outer circumferential die for forming the outer circumferential surface of the cylindrical holder.



In the event that Applicant contests the Examiners position, namely that Demerritt teaches at least one configuration in the disclosed process wherein "the spatial volume of the void part is larger than the volume of the extra amount of the optical -element material", then such a limitation is deemed as an obvious extension over the Demeritt teachings.

Again, one of ordinary skill in the art at the time of the invention would reasonably be expected to tailor the volume of starting material and the pressing conditions (e.g. pressure, time, etc.) utilized in the pressing operation. In the instant case, using less optical-element material than necessary to completely fill the void volume would provide distinct and predictable benefits, namely a more reproducible pressing operation. It

follows that one of ordinary skill in the art would reasonably be expected to arrive at applicants claimed invention through no more than routine experimentation and optimization of the prior art disclosed process

Similarly, should Applicant contest the particular operating temperatures (see, it is the Examiners position that one of ordinary skill would reasonably be expected to optimize the particular temperatures as a matter of routine quality control and process optimization. It follows, absent any compelling evidence to the contrary, that Applicants claimed operating temperatures are either implicitly disclosed in the prior art or alternately that said temperatures would reasonably have been derived by one of ordinary skill in the art by no more than routine experimentation and optimization of the prior art disclosed process.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 3, 21, and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bartman (US 4,891,053) as applied to Claim 1 under 35 USC 102(b) above and in further view of Angenent (US 4,895,585).

With respect to claim 3, Bartman fails to explicitly set forth the limitation wherein the cylindrical holder material is press molded in a radial direction. Angenent teaches the use of a supporting ring (see element (5) Figs 1a-c) which serves "as a temporary abutment" to improve the reproducibility of the process. (Column 1, Lines 58-64). It would have been obvious to one of ordinary skill in the art at the time of the invention to implement such a supporting ring to act as a temporary abutment in the Bartman process. This would have been an obvious modification to the Bartman process to one seeking to insure proper alignment of the holder materials during the press operation and thereby to "improve the reproducibility of the process".

With respect to Applicants newly presented claims 21 and 22, it is evident from the following annotated excerpt figure 5 that the Bartman process utilizes the clamed internal and external dies for forming the surfaces of the optical element and the circumferential surfaces of the cylindrical holder, respectively.

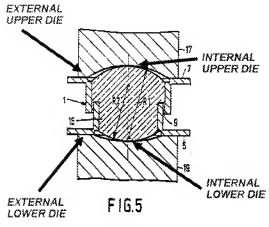


FIG.5

Claims 6, 7, and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bartman (US 4,891,053) as applied to claim 1 under 35 USC 102(b) above, and further in view of Neid (US 5,290,333).

Bartman is silent regarding the presence of micropores in the void part" as set forth in claim 6 or "micro-pores on the inner circumferential surface" as set forth in Claim 7 for the purpose of retaining the projected portion of the optical element. Neid teaches that the interlocking structure that arises when a glass penetrates the pores or cavities of a substrate "provides further mechanical bond strength by virtue of "the interlocking nature of the structure" (column 2, Lines 9-13). It would therefore have been obvious to one of ordinary skill at the time of the invention to provide cavities or micropores on the inner circumferential surface or the surface of the concentric void in the Bartman process in order to provide such an interlocking structure between the extruded glass and the void surface. This would have been an obvious modification for one of ordinary

skill seeking to enhance the structural stability and durability of the resulting structure by providing an interlocking structure.

Regarding Claim 9, projected portion of optical element material (see element (25) in Fig 6 above) disclosed by Bartman is broadly construed as a "hemispherical section of the optical-element material"

Claims 11 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bartman (US 4,891,053) as applied to claim 1 and 15, respectively.

Regarding **Claim 11**, Bartman teaches that the two rings are made of a Ni alloy (column 3, lines 59-60) or "made from an anti-magnetic material" (column 4, Lines 4-5). It is commonly appreciated in the art that Austenitic stainless steel (e.g. 306 and 316 stainless steel) contain between 8 and 20 percent Nickel and are therefore broadly considered nickel alloys (http://www.contractorsunlimited.co.uk/toolbox/stainless-steel.shtml). Further, Aluminum is commonly appreciated in the art as an anti-magnetic or non-magnetic metal. It would have therefore been obvious to one of ordinary skill in the art at the time of the invention to utilize 306 or 316 stainless steel or aluminum as the material of construction for the "holder material".

With respect to **Claim 17** and as indicated in the rejection under 35 U.S.C. 102(b) above, the lens blank and holder material are heated to the working temperature

of the glass blank. Although the instant reference does not specifically limit the holder material properties in the manner set forth in the instant claim, it would have been obvious to one of ordinary skill in the art to utilize a material presenting a softening temperature at least nominally higher than that of the optical element material being deformed. This would have been an obvious choice for one of ordinary skill seeking to maintain structural integrity of the holder material while the glass is deformed through the elevated temperature pressing operation. Therefore absent any compelling and unexpected results to the contrary, it is the Examiners position that it would have been obvious for one of ordinary skill to select an optical element holder material presenting a softening temperature "about 30 degrees higher than the softening temperature of the optical-element material."

Response to Arguments

Applicant's arguments with respect to claims 2-4, 6-9, and 11-19 have been considered but are moot in view of the new ground(s) of rejection.

Applicant specifically argues that none of the cited prior art references teaches "the spatial volume of the void part is larger than the volume of the extra amount of the optical-element material". Applicant's argument is held to be unpersuasive for the reasons detailed in the rejection of claims above. Specifically, it is the Examiners position that there exists a point in each of the Bartman and Demerritt processes wherein the extruded portion of optical element material does not completely fill the spatial volume of the respective void parts. As such the prior art processes each define

a process "comprising" a spatial volume larger than the volume of the extra amount of the optical element material.

Applicant's arguments regarding claims 13, 14, and 18 have been fully considered but they are deemed to be persuasive in part.

Here, Applicant argues that neither Bartman nor Demerritt teaches that the flow resistance could be adjusted in the particular manner.

As previously noted, flow resistance of the holder material is understood to be an inherent function of the width of the cavity (Claim 14), and the flow resistance of the void part is understood to inherently vary with the viscosity/temperature of the glass optical element material (claim 18). Both prior art references teach heating the glass to a softened state and therefore both references teach inherently teach adjusting the flow resistance of the void part with respect to the optical element material.

Now, claim 14 requires a step of actively adjusting the volume of the void part to accommodate a specific volume of optical element material. On this matter, Bartman explicitly teaches that the annular gap between the rings can be determined or "varied" so that an effectively high pressure can be realized during the molding process (Column 1, line 68-Column 2, Line 7). Demerritt is however silent regarding the claimed volume varying step.

Therefore, Applicant's arguments with respect to claims 13, 14, and 18 in view of the Bartman reference and the arguments with respect to claims 14, and 18 in view of the Demerritt reference have been fully considered but they are not persuasive.

Applicant's arguments with respect to claim 14 in view of the Demerritt reference is persuasive. The rejection of claim 13 in view of the Demerritt reference has been withdrawn.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JASON L. LAZORCIK whose telephone number is (571)272-2217. The examiner can normally be reached on Monday through Friday 8:30 am to 5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Steven Griffin can be reached on (571) 272-1189. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Steven P. Griffin/
Supervisory Patent Examiner, Art Unit 1791

JLL